

**Remarks**

Claims 34, 36-37, 40-41, 43-44 and 47 are currently pending.

Applicants have amended Claim 34. Basis for the amendments can be found throughout the Specification, more particularly on the bottom of page 8, top of page 9 and bottom of page 10. Applicants submit that no new matter has been added.

**REJECTIONS UNDER 35 U.S.C. § 112**

**I. The Rejected Claims Comply with the Written Description Requirement**

Claims 34, 36-37, 40-41, 43-44, and 47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner alleges that the “skilled artisan cannot envision the detailed chemical structure of all the derivatives encompassed in the claims.” (Paper No 20060929, page 3). In addition, the Examiner alleges that [a]dequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required.” (citing Fiers v. Revel, 25 USPQ2d 1601, 1606)(Paper No 20060929, page 4).

Applicants respectfully submit that the rejected claims meet the written description requirement as the claims indicate that the applicant was in possession of the claimed invention. Contrary to the Examiner’s allegations, Applicants have provided the necessary relevant identifying characteristics of the GLP-1 compounds of the present invention. Specifically, Applicants have provided the amino acid structure of the GLP-1 compounds such that one of skill in the art could write out all of the amino acid sequences of the GLP-1 compounds of the present invention.

Applicants’ claims are directed to a formulation comprising therapeutically effective amount of a glucagon-like peptide-1 (GLP-1) analog or derivative, a pharmaceutically acceptable preservative and a tonicity modifier, wherein the formulation has a pH that is about 8.2 to about 8.8, and wherein the amino acid sequence of the molecule consists of the same amino acid sequence as a molecule selected from the group consisting of GLP-1(7-34), GLP-1(7-35), GLP-1(7-36), GLP-1(7-37), or the amide forms thereof, with a modification as recited in Claim 34. Amended Claim 34 clearly sets forth the detailed chemical structure of the compounds of the invention because the claim clearly indicates that the amino acid

sequence of the GLP-1 compounds consist of the same amino acid sequence as GLP-1(7-34), GLP-1(7-35), GLP-1(7-36), or GLP-1(7-37), with the exception that the amino acid sequence contain one modification from the specified Markush listing. One of skill in the art is aware of the amino acid sequence of GLP-1(7-34), GLP-1(7-35), GLP-1(7-36), and GLP-1(7-37) and claim 34 clearly identifies the selected positions which may be modified along with the acceptable choices for the amino acids at the specified positions.

The Examiner has cited Fiers, but Applicants' situation is not analogous to that in Fiers. In Fiers, Revel claimed a DNA sequence without disclosing the *actual DNA sequence* in the priority document at issue. The Federal Circuit stated, "[a]n adequate written description of a DNA requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the DNA itself." Fiers, 984 F.2d at 1170. Unlike in Fiers, Applicants have provided the required description of the GLP-1 compounds encompassed by the rejected claims by providing the amino acid sequence of the compounds. Applicants have specified which particular changes at selected amino acids positions are contemplated in the present invention. As mentioned above, one of skill in the art would be able to write out all the amino acid sequences of the GLP-1 compounds of the present invention. Therefore, Applicants submit that a skilled artisan would be able to envision all the compounds encompassed by the claims. As such, Applicants respectfully request withdrawal of the rejection.

## **II. The Rejected Claims Satisfy the Enablement Requirement**

Claims 34, 36-37 and 40 are rejected under 35 U.S.C. 112, first paragraph as not reasonably providing enablement for any GLP-1 derivative or variant or amide form thereof. The Examiner alleges that the "specification is not enabling for any GLP-1 derivative or variant or amide form thereof."

Applicants submit that the present amendments to the claims have addressed the Examiner's concerns. As the Examiner indicates, the specification is enabling for a shelf stable formulation comprising SEQ ID NO: 2 and GLP-1 analogs known in the art . . . . " (Paper No 20060629, page 4). The present amendments have specified the amino acid sequence of the GLP-1 analog and derivatives of the present invention which applicants submit are known in the art. As indicated in the Specification, the amino acid sequence of the GLP-1 compounds of Claim 34 have been described in WO 91/11457. (Specification bottom of page 9). Further, Applicants claims are not directed to any "GLP-1 derivative or variant or amide form thereof" as alleged by the Examiner (Paper No 20060629, page 4).

Present Claim 34 specifies the amino acids sequences of the GLP-1 analogs and derivatives of the present invention. Thus, Applicants have addressed the Examiner's concerns and respectfully request withdrawal of the rejection.

### CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 34, 36, 40-41, 43 and 47 are rejected under 35 U.S.C. 102 (e) as being anticipated by Hoffman (U.S. Patent No. 6,358,924, hereafter "Hoffman"), based on the recitation in Hoffman of a pH of "about 6.5 to about 9.0." Applicants submit that Hoffman does not disclose each and every feature of the Applicants' claims and as such, Hoffman does not anticipate.

Anticipation requires that each limitation of a claim be found, expressly or inherently, in a single reference. Perricone v. Medicis Pharm. Corp., 432 F.3d 1368, 1367, (Fed. Cir. 2005). Further, the disclosure of a genus in the prior art is not necessarily a disclosure of every species that is a member of that genus. In re Baird, 16 F.3d 380, 382 (Fed. Cir. 1994). The Examiner alleges that the recited claims are anticipated by Hoffman as "Hoffman also teach[es] a pH range of 6.5-9.0 which falls within the recited range." (Paper No. 20060929, page 10). Applicants would like to clarify that the pH range of 6.5-9.0 would not fall within the range of 8.2 to 8.8 as alleged by the Examiner.

Applicants submit that the disclosure of a pH range of 6.5-9.0 in Hoffman does not disclose the recited pH range of 8.2 to 8.8 with sufficient specificity to anticipate. Recently the Federal Circuit held that a smaller range out of a larger genus was not anticipated by the disclosure of the larger genus. Atofina v Great Lakes Chemical Corp., 441 F.3d 991, 999 (Fed. Cir. 2006). In Atofina, the claimed range was 330 to 450 degrees with the prior art disclosing a range of 100 to 500 degrees. The Federal Circuit held "no reasonable fact finder could conclude that the prior art describes the claimed range with sufficient specificity to anticipate this limitation of the claim." *Id.*

Similarly, the pH range of Hoffman does not sufficiently specify the present pH range and thus, Hoffman does not anticipate the Applicants' recited pH range. Hoffman discloses a pH range of 6.5 to 9.0. In the context of pH, this range is a large range and thus a large genus. This range encompasses values which range from slightly acidic to basic values including neutral values. Applicants are claiming a narrow, specific pH range of 8.2 to 8.8. The Examiner has not provided how Hoffman provides sufficient specificity to anticipate the present pH range of 8.2 to 8.8. The claimed range in Atofina encompassed 30% of the larger

genus and was found not to anticipate “[g]iven the considerable difference between the claimed range and the range in the prior art . . . .” Id. Applicants’ claimed range encompasses encompasses 24%  $((8.8-8.2)/(9.0-6.5)$  or  $0.6/2.5$ ) of the alleged prior art range. Thus, as in Atofina, Applicants submit Hoffman does not sufficiently specify the claimed range such that the claimed range is anticipated.

#### **SUMMARY AND CONCLUSION**

Applicants respectfully assert that the application is in condition for allowance. The claims are novel and clear in their meaning.

If, for any reason, the Examiner feels that a telephone conversation would be helpful in expediting the prosecution of this case, the Examiner is urged to call me.

Respectfully submitted,

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